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AESO/FA

July 13, 2001

Ms. Cindy Lester
Chief, Regulatory Branch
U.S. Army Corps of Engineers
3636 North Central Avenue, Suite 760
Phoenix, Arizona 85012-1936

Dear Ms. Lester:

The Service has reviewed Public Notice 974-0218-RWF (PN) dated June 1, 2001, issued by the U.S. Army Corps of Engineers. We have also reviewed the least environmentally damaging practicable alternatives analysis (Jones and Stokes *et al* 2001), and the conceptual mitigation plan (Senna Environmental Services 2001). On June 25, your staff informed us that the comment period on the PN had been extended to July 13. DMB White Tank, LLC has submitted an application for a Section 404 Clean Water Act (CWA) permit to build the 8,800-acre Whitestone master planned residential community in Buckeye, Maricopa County, Arizona (T2N, R3W; T2N, R2W; T1N, R3W; T1N, R2W). These comments are provided under the authority of and in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended U.S.C. 661 et. seq.) (FWCA), but do not constitute our final review of the permit application in accordance with the FWCA and section 404(m).

We participated in two conference calls with the applicant and other resource agencies on June13 and July 5, and conducted a site investigation with the applicant's representatives on July 11. As relayed to both your agency and the applicant during the conference calls and site visit, our primary concem is the lack of a thorough assessment of, and mitigation for, the potential adverse effects of the project on the biological function of the jurisdictional waters in the action area. The PN indicates that of a total of 63.8 acres of jurisdictional waters on the project site, 41.4 acres would be directly subjected to the discharge of dredged and fill material. There is scant information regarding the potential adverse effects of the adjacent upland development on the biological function of jurisdictional washes. We suggest an assessment be conducted to determine the extent of secondary and cumulative effects on jurisdictional wasters as defined in the Section 404(b)(1) Guidelines (CFR 40 part 230.11).

Alterations to adjacent upland areas can impact the physical, chemical, and biological characteristics of adjacent and downstream jurisdictional waters and result in secondary effects

through modification of ecological processes such as infiltration capacity, surface runoff, underground water storage, sediment load, and organic matter input. For instance, the immediate hydrologic effects of upland development is the increase in the area of low or zero infiltration capacity, due to decreased energy dissipation provide by roughness (i.e. removal of plant cover) and increased impermeable surface (i.e. placement of asphalt and concrete). Temporary secondary effects can include increases in sediment yield and a decrease in the number of smaller order streams to convey sediment load, while long-term secondary effects may include incision of arroyos and the degradation of existing channels resulting in channel downcutting or enlargement (Dunne and Leopold 1978, Leopold 1994). The combined effects of adjacent upland development may include bank degradation, channel downcutting, increased flood events, decreased surface flow period, and reduced biological productivity.

The 404(b)(1) Guidelines directs the Corps to analyze the effects of 404 permitted activities on "surrounding areas" as well as "other wildlife" including resident and transient mammals, birds, reptiles, and amphibians (40 CFR Part 230). Most transient wildlife species associated with aquatic ecosystems utilize adjacent upland areas for a large portion of their life cycle. For instance, Szaro and Jakle (1985) found that Gila woodpeckers used saguaros located in adjacent uplands for nesting purposes while foraging extensively along washes. Also bird community structure in a given habitat type depends, at least partially, on bird species composition and density in adjacent habitats (Szaro and Jakle 1985, Shurcliff 1980). Krausman *et al* (1985) found that while desert mule deer utilize uplands, xeroriparian washes and their associated vegetation were also an important component of desert mule deer habitat. It has also been found that as riparian areas become increasingly isolated, or fragmented, they rapidly lose riparian or upland herpetofaunal species (Jones et al 1985, Jakle and Gatz 1985). These concepts illustrate that an intimate biological and ecological relationship exists between adjacent uplands and waters, and that activities in uplands will necessarily have some level of effect on the biological function of adjacent jurisdictional waters.

The PN states that a preliminary determination has been made that an environmental impact statement (EIS) is not required for the proposed work. As such, we assume that your agency is preparing an environmental assessment (EA) in accordance with the National Environmental Policy Act. In addition to analyzing the true effect of the project on the biological functioning of jurisdictional waters, the EA should analyze the total impact of the entire master planned community on the Sonoran desert landscape. We believe the total impact of the development which would be authorized by your agency should be assessed, including parts located on uplands and all direct, indirect, and cumulative effects, and any interrelated and interdependent activities. We believe the footprint of the permitted project that should be assessed by the Corps is, at minimum, the total 8,800 acres of development.

Corps regulations (CFR 33, Appendix B to Part 325) state the District Engineer is considered to have authority over portions of the project beyond the limits of jurisdiction "where the environmental consequences of the larger project are essentially products of the Corps permit action." If it is impracticable to bridge span all jurisdictional waters on site, thus avoiding

impacts to jurisdictional waters, we believe the proposed development could not occur but for the issuance of a Section 404 permit and it would be within Corps authority to extend the scope of analysis beyond the limits of the ordinary high water mark and assess interrelated and interdependent activities and effects. Corps regulations involving the Section 404 public interest review state that, "The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments." In regard to determining the appropriate scope of analysis, "in all cases, the scope of analysis used for analyzing both impacts and alternatives should be the same scope of analysis used for analyzing the benefits of the proposal". We assume the housing, associated residential amenities, and economic growth provided by the proposed activity will be considered as a benefit in your public interest review. We believe the Corps should also consider the detriments, such as overall loss of wildlife habitat and ecosystem function, associated with that development.

Additionally, the Regulations For Implementing The Procedural Provisions Of The National Environmental Policy Act (NEPA) (40 CFR, Parts 1502.16 and 1508.8), states the environmental consequences of an action include both direct effects and "Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."

Your EA should include the totality of potential effects of the master planned community on Sonoran desertscrub vegetation communities and local and regional wildlife resources; including potential shifts in community structure, changes in diversity, relative abundance, and species richness and evenness, and long-term effects on population demographics and viability. This analysis should be more than a qualitative assessment, and use acceptable empirical methodologies to quantify and evaluate the expected impacts on biotic resources. Marzluff (1997) contends that urbanized habitats typically support larger and richer avian communities that are less even in relative abundance because they are dominated by a few, abundant species. We are concerned that project related landscape modifications may selectively displace transient wildlife species, shift plant and animal species density and richness, disrupt the normal functions of the ecosystem, and lead to reductions in overall biological productivity and diversity.

The loss of the upland vegetation communities associated with development of the proposed community could have a negative impact on wildlife populations within and adjacent to the project area. These areas likely provide movement corridors, nesting areas, and foraging areas for numerous wildlife species. The proposed modification could adversely affect population dynamics through habitat loss or fragmentation. This type of disturbance can disrupt intra- and interspecific wildlife interactions, resulting in population and community shifts (Knight *et al* 1995). Animals could be displaced to adjacent areas that may already be functioning at or near carrying capacity, resulting in increased competition, predation, disease transmission, and mortality. The associated development and increased human activity could place increased stress

on local wildlife populations resulting in reduced fecundity and recruitment, adversely affecting local population viability.

The conceptual mitigation plan proposes a combination of habitat restoration and preservation along several xeroriparian washes within the proposed site. In accordance with existing regulations and procedures, mitigation measures should be developed that first address the issues of avoidance and minimization, and lastly compensation. As stated above, we are concerned that adjacent upland development may compromise the ability of avoided and preserved jurisdictional waters to maintain biological and ecological function. Therefore, for compensatory mitigation, measures should not only mitigate vegetative parameters such as canopy cover, biomass, and total volume; but should also mitigate changes or loss of animal diversity, abundance, density, richness, and evenness. Monitoring provisions and criteria should be developed to track the success of mitigation for animal populations as well as vegetation communities. We believe a mitigation plan based on this approach would be a practicable and effective means by which to judge the success of mitigation and we are willing to assist in the development of the plan.

The Service is also concerned about the cumulative effects this proposed action and other past and future Section 404 permitted activities may have on regional wildlife populations and waters within and around the White Tanks Mountains. The proposed project site is close to the White Tanks Mountain Regional Park to the north. The park acts as a refuge, providing protected habitat for numerous wildlife inhabiting this region of the Sonoran desert. The effect of urban growth along the boundaries of protected areas, especially parks, has become the focus of several recent studies and a primary concern for natural resource managers (Shaw 1998). For instance, Bellantori and Krausman (1993) indicated that wildlife habitat outside of Saguaro National Park in southern Arizona has been fragmented, travel corridors have been destroyed, and fauna may have already been reduced as a result of urbanization. Briggs *et al* (1996), state that development of bordering land is one of the greatest threats to the biodiversity of protected areas in the United States. We believe your office should perform assessments to determine the level of cumulative effects that have occurred to wildlife resources and waters as a result of Section 404 permitted activities within and around the White Tanks, as required by the 404(b)(1) Guidelines (40 CFR, Part 230.11). It may be prudent to develop a comprehensive strategy to address and remedy the cumulative adverse environmental impacts of Section 404 permitted activities, especially urbanization, within this geographic area.

We request that, when completed, the draft EA and any other applicable assessments be submitted to our office so we may evaluate the significance of environmental impact and conduct a thorough review of the proposed project. We further request that the mitigation plan be modified as suggested, and then provided to our office so that we may evaluate effectiveness of the plan.. Based on these concerns, the Service objects to the issuance of this permit until and unless we are provided an opportunity to review the EA and revised mitigation plan and provide substantive comments and recommendations in accordance with the FWCA and section 404(m) of the CWA.

If we can be of further assistance please contact Mike Martinez (x224) or Don Metz (x217).

Sincerely,

/s/ David L. Harlow
Field Supervisor

cc: Regional Administrator, Environmental Protection Agency, San Francisco, CA
Supervisor, Project Evaluation Programs, Arizona Game and Fish Department, Phoenix, AZ

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